Statement of Basis - Narrative
NSR Permit

Company: Williams Four Corners LLC
Facility: 31-6 CDP Compressor Station
Permit No(s).: PSD-1031-M9 and P027-R2M3
Tempo/IDEA ID No.: 1006 - PRN20110002
Permit Writer: Melinda Owens

Fee Tracking

Tracking	**NSR tracking entries completed:** [X] Yes [] No
	NSR tracking page attached to front cover of permit folder: [X] Yes [] No
	Paid Invoice Attached: [X] Yes [] No
	Balance Due Invoice Attached: [] Yes [X] No
	Invoice Comments: $500 filing fee paid 7/1/2011. Balance of $1,320 paid.

Permit Review	**Date to Enforcement:** TBD	**Inspector Reviewing:**
	Date Enf. Review Completed: TBD	**Date of Reply:** (if necessary)
	Date to Applicant: TBD	**Date of Reply:** TBD
	Date of Comments from EPA: NA	**Date to EPA:** NA
	Date to Supervisor: TBD	

1.0 Plant Process Description:

This facility is a natural gas compressor station. Pipeline natural gas from a gathering system enters the facility via a distribution system that feeds natural gas-fired reciprocating engines. Natural gas is then compressed by these engines. After compression, wet natural gas is routed to triethylene glycol dehydrators to remove water. The dry natural gas is then discharged into another pipeline for transportation.

2.0 Description of this Modification:

This is a minor PSD modification to:

A. Remove 2 permitted, never-installed engines, Units 2 and 34.

B. **SSM:** In accordance with 20.2.7.15 NMAC, WFC is applying to permit emissions exceeding an emission limitation due to routine and predictable startup, shutdown, and maintenance (SSM). For this facility SSM emissions include venting natural gas from compressors (Units 1a, 3a – 16a, & 33a) and associated piping resulting in emissions of 61.5 pph and 12.0 tons per year of VOCs and small quantities of HAPs.

C. **Malfunction:** Applying for a maximum of 10 tpy of VOC emissions from periodic venting of natural gas caused by malfunctions as defined in 20.2.7.7.E NMAC. This request is in accordance with AQB's guidance Implementation Guidance for Permitting SSM Emissions and Excess Emissions dated January 1, 2011.

3.0 Source Determination:

1. The emission sources evaluated include 31-6 CDP.

2. Single Source Analysis:

A. SIC Code: Do the facilities belong to the same industrial grouping (i.e., same two-digit SIC code grouping, or support activity)? Yes

B. Common Ownership or Control: Are the facilities under common ownership or control? Yes

C. Contiguous or Adjacent: Are the facilities located on one or more contiguous or adjacent properties? Yes

3. Is the source, as described in the application, the entire source for 20.2.70, 20.2.72, or 20.2.74 NMAC applicability purposes? Yes

4.0 PSD Applicability:

A. The source, as determined in the Source Determination above, is an **existing major PSD** source. SSM emissions are existing and none are due to a modification. A portion or all of the 10 tpy malfunction emissions may be in addition to existing malfunction emissions but none are due to a modification. Regardless, the combined emission rates from SSM and Malfunction are less than 40 tpy VOC, which is less than the significant emission rate in Table 2, 20.2.74.502 NMAC.

B. Netting is not required; project emissions are not significant.

C. BACT is not required for this permit revision since this is not a major PSD modification.

5.0 History (In descending chronological order, showing NSR and TV):

*The asterisk denotes the current active NSR and Title V permits that have not been superseded.

Permit Number	Issue Date	Action Type	Description of Action (Changes)
P027R3	TBD	TV Renewal	In-house renewal includes incorporating the removal of 2 engines, updating emission factors, and adding SSM & Malfunction emissions.

Permit Number	Issue Date	Action Type	Description of Action (Changes)
PSD1031M9	TBD	NSR Significant Revision	Removal of 2 engines, Units 2 and 34. **SSM:** In accordance with 20.2.7.15 NMAC, WFC is applying to permit emissions exceeding an emission limitation due to routine and predictable startup, shutdown, and maintenance (SSM). For this facility SSM emissions include venting natural gas from compressors (Units 1a, 3a – 16a, & 33a) and associated piping resulting in emissions of 61.5 pph and 12.0 tons per year of VOCs and small quantities of HAPs. **Malfunction:** Apply for a maximum of 10 tpy of VOC emissions from venting caused by malfunctions as defined in 20.2.7.7.E NMAC. This is in accordance with AQB's guidance Implementation Guidance for Permitting SSM Emissions and Excess Emissions dated January 1, 2011.
1031-M8-R3*	4/8/2010	Admin Rev	Change of unit serial numbers
1031-M8-R2*	9/3/2009	Admin Rev	Change of unit serial numbers
1031-M8 R1*	6/18/2009	Admin Rev	Change of unit serial numbers
P027-R2-M3*	2/26/2009	Modification	Incorporating the modification per the NSR permit 1031-M8.
1031-M8*	10/01/07	Significant Revision	Installation of catalytic converters on eight of the Waukesha engines, remove four dehydrators and increase permitted VOC emissions from the seven remaining dehydrators.
1031-M7-R2	9/12/06	Admin Rev	Name change to Williams Four Corners, LLC
P027-R2-M2	9/12/06	Admin Rev	Name change to Williams Four Corners, LLC
P027-R2-M1	7/21/06	Admin Rev	Name Change of Responsible Official
P027-R2	5/5/06	Title V	Renewal
1031-M7-R1	11/16/05	Withdrawn Admin. Rev.	The Administrative Revision identified as 1031M7R1 is cancelled.
1031-M7	12/19/05	Significant Rev.	Decrease in NOx emissions of engines following a change in emission calculation method, where a lower value is adopted from manufacturer's data (0.9 g/hp-hr instead of 1.5 g/hp-hr previously adopted). Increase in facility total emissions of CO, and VOC due to the addition of equipment. Addition of two (2) Waukesha 7042GL high speed turbocharged engines (units 33-34). Addition of one (1) 20MMscfd dehydrator (unit 35).
1031-M6-R6	12/03/04	Admin. Rev.	Update unit package serial numbers for engines
1031-M6-R5	10/22/04	Tech. Rev.	Technical Revision is to add two (2) 30 MMCFD TEG dehydrators to treat coal seam quality natural gas and to remove six (6) 20 MMCFD TEG dehydrators that were permitted, but were never installed.

Permit Number	Issue Date	Action Type	Description of Action (Changes)
1031-M6-R4	01/27/04	Admin. Rev.	Admin. Revision for a like-kind replacement of one Waukesha 7042 GL.
1031-M6-R3	01/27/04	Admin. Rev.	Admin. Revision for a like-kind replacement of one Waukesha 7042 GL.
1031-M6-R2	06/16/02	Admin. Rev.	Admin. Revision for a like-kind replacement of one Waukesha 7042 GL.
1031-M6-R1	09/04/01	Admin. Rev.	Admin. Revision for a like-kind replacement of one Waukesha 7042 GL.
P027-R1	10/18/00	Title V Renewal	Renewal: References 1031-M6
1031-M6	05/25/00	Significant Rev.	Permit mod to WFS to remove flares from the two new dehys. Gas analyses submitted with the application indicated that the conventional gas composition contained little to no C4+ hydrocarbons, which prompted the request to remove the flares. Williams predicted a very slight increase in VOC emissions after the modification. The coal seam gas still vent dehydrator emissions were also revised in this application. As the permit writer thought it unusual for a conventional gas analysis not to contain any C6+ components, a permit condition was included to require quarterly extended gas analysis.
1031-M5	03/16/99	Significant Rev.	Permit mod to WFS to add one 12 MMSCFD and one 20 MMSCFD glycol dehy (Units 29 & 30) to process conventional gas, each equipped w/ a flare to control VOCs. Minimal changes in emission rates. The permit states that the removal of the flares would trigger PSD review and a BACT analysis.
PSD-NM-1031-M4	06/08/98	Significant Rev.	Installation of high-speed turbo-chargers on the existing 14 engines to increase the horsepower to 1370 (site rated) at 1200 rpm, removing the CO catalyst, the addition of two Waukesha 7042 GL engines and six glycol dehys w/flares to control VOCs for a total of 16 7042 GL engines and 6 dehys at 12 MMSCFD and 6 at 20 MMSCFD. This was a major modification to the source. PSD review was triggered by significant emission increases in NO_X, CO and VOC. "Lean Burn" design was accepted as BACT for the Waukesha engines and the processing of coal seam gas only as BACT for the dehydrators (Units 23 - 28) to minimize VOC emissions. Part of Specific condition 1.c. of the permit states "A permit revision request to remove the limitation of coal seam gas only in the dehydrators will trigger PSD review and BACT analysis for the dehydrators.
P027	03/04/97	Title V Permit	New Title V Permit
1031-M3	05/03/95	Significant Rev.	Addition of five Waukesha 7042 GL, engines. The plant now has 14 Waukesha 7042 GL engines site rated at 1085 hp each. Unit 9 required to have a CO catalyst to keep the source minor. There are 6 glycol dehydrators. Governor seals required on engines to limit rpm.

Permit Number	Issue Date	Action Type	Description of Action (Changes)
1031-M2	07/14/93	Significant Rev.	Permit mod to add four Waukesha L7042 GL engines de-rated to 990.
1031-MI	09/16/92	Significant Rev.	Permit modification to WFS to add four Waukesha 7042 GL, engines. All five engines de-rated at 990 hp.
1031	12/16/91	NOI	NOI issued for original installation of one Waukesha 7042 GL compressor engine de-rated at 89.5 hp.

6.0 Public Response/Concerns:

On August 22, 2011, WildEarth Guardians (WEG) and San Juan Citizens Alliance (SJCA) submitted written comments specifically regarding the application to permit startup, shutdown, maintenance, and malfunction emissions. Submittal of written comments was before the end of the 30-day comment period. They have also requested to review the draft permits before issuance.

To date, this permit writer is not aware of any other public comments or concerns with this permit application.

The Department's analysis was made available on 9/29/2011.
WEG & SJCA were provided a copy of the analysis on: 9/29/2011. Thirty days will be provided for review in accordance with 20.2.72.206.A(3) NMAC.
WEG & SJCA were provided a copy of the draft permit on: 9/29/2011.

7.0 Compliance Testing:

Unit No.	Compliance Test	Test Dates
15	Tested in accordance with EPA test methods for NOx and CO as required by the construction permit.	01/29/97
16	Tested in accordance with EPA test methods for NOx and CO as required by the construction permit.	07/11/95
17	Tested in accordance with EPA test methods for NOx and CO as required by the construction permit.	Unknown
17	Tested in accordance with EPA test methods for formaldehyde as required by 40 CFR 63, Subpart ZZZZ.	11/13-14/07
18	Tested in accordance with EPA test methods for NOx and CO as required by the construction permit.	Unknown
18	Tested in accordance with EPA test methods for formaldehyde as required by 40 CFR 63, Subpart ZZZZ.	11/13-14/07
25	Tested in accordance with EPA test methods for NOx and CO as required by the construction permit.	1997
25	Tested in accordance with EPA test methods for formaldehyde as required by 40 CFR 63, Subpart ZZZZ.	11/13-14/07
25	Tested in accordance with EPA test methods for formaldehyde as required by 40 CFR 63, Subpart ZZZZ.	07/07/08
32	Tested in accordance with EPA test methods for NOx, CO as required by the construction permit.	02/26/08
32	Tested in accordance with EPA test methods for formaldehyde as required by 40 CFR 63, Subpart ZZZZ.	02/28/08

The testing waiver for Williams Four Corners and Waukesha 7042 GL engines was officially rescinded by AQB on September 20, 2010 by Debra McElroy. With the issuance of this NSR permit, all engines become subject to Annual Periodic Testing to determine actual emissions and emission compliance.

8.0 Startup and Shutdown:

A. If applicable, did the applicant indicate that a startup, shutdown, and emergency operational plan was developed in accordance with 20.2.70.300.D(5)(g) NMAC? **Yes**

B. If applicable, did the applicant indicate that a malfunction, startup, or shutdown operational plan was developed in accordance with 20.2.72.203.A.5 NMAC? **Yes**

C. Did the applicant indicate that a startup, shutdown, and scheduled maintenance plan was developed and implemented in accordance with 20.2.7.14.A and B NMAC? **Yes**

D. Were emissions from startup, shutdown, and scheduled maintenance operations calculated and included in the emission tables? **Yes, in accordance with 20.2.7.15 NMAC, the applicant has submitted an application to permit emissions from routine and predictable startup, shutdown, and maintenance.**

9.0 Compliance and Enforcement Status: N/A, not a TV permit.

10.0 Modeling:

The emissions subject to this permit revision are VOCs and HAPS which are not subject to air dispersion modeling. This is not a PSD major modification.

VOC is a precursor to the criteria pollutant, ozone. The AQB tracks compliance with the ozone National Ambient Air Quality Standards through monitoring and does not require pre-construction single source ozone modeling. Ozone modeling is too cost prohibitive to attach to a typical permit application. However, applications for PSD major new or modifications may require ozone modeling if the facility-wide VOC emissions are 100 tpy or more. These applicants are required to contact AQB and EPA to determine if ozone modeling is required.

Regional ozone modeling for the Four Corners area was done in 2009 (see http://www.nmenv.state.nm.us/aqb/4C/Modeling.html) and the Air Quality Bureau is continuing to analyze ozone in the region.

11.0 State Regulatory Analysis(NMAC/AQCR):

The permit writer verified the state and federal regulatory applicability determinations that applied to the units and the activity of venting from SSM and Malfunction emissions in permit application number PSD1031M9. Some determinations are taken from the Title V Permit P027R2M3 statement of basis.

According to the applicant's applicability determination and verification by the department, the venting of natural gas due to SSM or malfunction and any units from which this venting would occur are not currently subject to any NSPS or NESHAP. Regardless, the permitting of SSM and/or malfunction emissions do not supersede any other federal or state regulation. The most stringent requirement applies.

20 NMAC	Title	Applies (Y/N)	Comments
2.3	Ambient Air Quality Standards	Y	20.2.3 NMAC is a SIP approved regulation that limits the maximum allowable concentration of Total Suspended Particulates, Sulfur Compounds, Carbon Monoxide and Nitrogen Dioxide.
2.7	Excess Emissions During Malfunction	Y	Applies to all facilities' sources
2.61	Smoke and Visible Emissions	Y	Engine Units 1, 3-16, 33 and Dehydrator Units 17-22, 31 are stationary combustion equipment.
2.70	Operating Permits	Y	PTE is > 100 TPY, Source is major for NOx, CO, VOCs, Formaldehyde, and Total HAPS as defined at 20.2.70.200 NMAC.
2.71	Operating Permit Fees	Y	Source is subject to 20.2.70 NMAC as cited at 20.2.71.109 NMAC.
2.72	Construction Permits	Y	PER > 10 pph or 25 tpy for a criteria pollutant This facility is subject to 20.2.72 NMAC and NSR Permit numbers: 1031M9.
2.73	NOI & Emissions Inventory Requirements	Y	Applicable to all facilities that require a permit. PER > 10 tpy for a criteria pollutant
2.74	Permits-Prevention of Significant Deterioration	Y	This facility is an existing PSD major source (PTE >250 tpy); CO PTE = 300.0 tpy.
2.77	New Source Performance	Y	Applies to any stationary source constructing or modifying and which is subject to the requirements of 40 CFR Part 60, as amended through January 31, 2009. Subpart JJJJ may apply to Unit 1 when and if it is installed.
2.78	Emissions Standards for HAPs	Y	This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 61.
2.82	MACT Standards for Source Categories of HAPs	Y	This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 63, as amended through January 31, 2009. Subparts A and HH apply. When installed, Unit 1 may be subject to ZZZZ.

12.0 Federal Regulatory Analysis:

Air Programs Subchapter C (40 CFR 50)	National Primary and Secondary Ambient Air Quality Standards	Applies (Y/N)	Comments
C	Federal Ambient Air Quality Standards	Y	Independent of permit applicability; applies to all sources of emissions for which there is a Federal Ambient Air Quality Standard.

NSPS Subpart (40 CFR 60)	Title	Applies (Y/N)	Comments
A	General Provisions	Y	Applies if any other subpart. Subpart JJJJ may apply.
JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	Y (see discussion)	Under 40 CFR 60.4230(a)(4)(i), the subpart applies to spark-ignition (SI), lean-burn, reciprocating internal combustion engines (RICE) with a maximum engine power greater than or equal to 500 horsepower if the engine was manufactured after June 12, 2006. Each of the eighteen permitted RICE are 4-stroke, lean burn (4SLB) engines with a maximum engine power rating of 1,478 brake horsepower (bhp). The current installed engines (Units 3 – 16 and 33) were manufactured prior to June 12, 2006 and are not subject to the subpart. The applicability of Subpart JJJJ to Unit 1 will be evaluated at the time of installation, if and when the unit is installed.

NESHAP Subpart (40 CFR 61)	Title	Applies (Y/N)	Comments
A	General Provisions	N	Applies if any other subpart applies; no subpart applies.

MACT Subpart (40 CFR 63)	Title	Applies (Y/N)	Comments
A	General Provisions	Y	Applies if any other subpart applies. MACT Subpart HH applies. Subpart ZZZZ may apply, as discussed below.
HH	Oil and Natural Gas Production Facilities	Y (see discussion)	The facility is a major source of HAP under Subpart HH. The facility includes seven TEG dehydrators, which are affected sources. Affected sources at major HAP sources are defined at 63.760(b)(1). Each individual TEG dehydrator has predicted actual annual average benzene emissions less than 1 ton per year. Therefore, per 63.764(e)(1)(ii), the affected sources are exempt from the General Standards.
ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal	Y (see discussion)	Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, is applicable as the facility is a major HAP source as defined by the subpart. Subpart ZZZZ applies differently to the 18 engines

MACT Subpart (40 CFR 63)	Title	Applies (Y/N)	Comments
	Combustion Engines (RICE MACT)		(all are 4SLB, site-rated at 1,380 hp) found at 31-6 CDP. Units 3-16 and 33 are 4SLB stationary existing RICE, where "existing" is defined as "constructed prior to December 19, 2002." Thus, although they are affected sources as defined by the regulation, as per 63.6600(c), they are exempt from the regulation and Subpart A, per 63.6590(b)(3). Unit to be installed, #1, may be subject to the regulation if the source is constructed on or after December 19, 2002.

Miscellaneous	Title	Applies (Y/N)	Comments
40 CFR 64	Compliance Assurance Monitoring	N	There are no units with uncontrolled emissions above the major TV thresholds.

13.0 Exempt and/or Insignificant Equipment that do not require monitoring:

NSR Exempt Equipment (not entered into Tempo database)

Emission Unit No.	Unit Description	JUSTIFICATION
T-1 thru T-14	Storage Tank (Lubrication Oil)	20.2.72.202.B(2): VOCs with vapor pressure < 10 mmHg
T-15	Storage Tank (Lubrication Oil)	20.2.72.202.B(2): VOCs with vapor pressure < 10 mmHg
T-16	Storage Tank (Glycol)	20.2.72.202.B(2): VOCs with vapor pressure < 10 mmHg
T-17	Storage Tank (Corrosion Inhibitor)	20.2.72.202.B(5): Potential to emit is < 0.5 ton per year
T-18 thru T-23	Storage Tank (Glycol)	20.2.72.202.B(2): VOCs with vapor pressure < 10 mmHg
T-24	Storage Tank (Solvent)	20.2.72.202.B(2): VOCs with vapor pressure < 10 mmHg
T-25	Storage Tank (Produced Water)	20.2.72.202.B(5): Potential to emit is < 0.5 ton per year
T-26	Storage Tank (Used Oil)	20.2.72.202.B(2): VOCs with vapor pressure < 10 mmHg
T-27	Storage Tank (Wastewater)	20.2.72.202.B(5): Potential to emit is < 0.5 ton per year
T-28 & T-29	Storage Tank (Lubrication Oil)	20.2.72.202.B(2): VOCs with vapor pressure < 10 mmHg
T-30	Storage Tank (Glycol)	20.2.72.202.B(2):

		VOCs with vapor pressure < 10 mmHg
T-34 thru T-40	Storage Tank (Glycol)	20.2.72.202.B(2): VOCs with vapor pressure < 10 mmHg
T-42	Storage Tank (Wastewater)	20.2.72.202.B(5): Potential to emit is < 0.5 ton per year
T-43	Storage Tank (Produced Water)	20.2.72.202.B(5): Potential to emit is < 0.5 ton per year
T-44	Storage Tank (Produced Water)	20.2.72.202.B(5): Potential to emit is < 0.5 ton per year
T-45 & T-46	Storage Tank (Used Oil)	20.2.72.202.B(2): VOCs with vapor pressure < 10 mmHg
T-47 & T-48	Storage Tank (Glycol)	20.2.72.202.B(2): VOCs with vapor pressure < 10 mmHg
T-49	Storage Tank (Glycol)	20.2.72.202.B(2): VOCs with vapor pressure < 10 mmHg
T-50	Storage Tank (Methanol)	20.2.72.202.B(5): Potential to emit is < 0.5 ton per year
T-51 & T-52	Storage Tank (Lubrication Oil)	20.2.72.202.B(2): VOCs with vapor pressure < 10 mmHg
T-55 & T-56	Storage Tank (Produced Water)	20.2.72.202.B(5): Potential to emit is < 0.5 ton per year
T-57 & T-58	Storage Tank (Produced Water)	20.2.72.202.B(5): Potential to emit is < 0.5 ton per year
F-1	Fugitive Emissions	20.2.72.202.B(5): Potential to emit is < 0.5 ton per year
L-1	Truck Loading Emissions	20.2.72.202.B(5): Potential to emit is < 0.5 ton per year

14.0 New/Modified/Unique Conditions (Format: Condition#: Explanation):

Specific Condition B. SSM VOC Emission Limits – Condition demonstrates compliance with emission limits from routine and predictable emissions due to startup, shutdown, and/or maintenance (SSM). SSM emission are due to venting of field gas. Permittee demonstrates compliance with limits by applying the mol % VOC content from the most recent gas analysis to the amount of field gas vented.

Specific Condition C. Malfunction Emission Limits – Malfunction emissions are also from venting field gas. Since they are not predictable, the permittee must identify the source of the malfunction emissions so that enforcement and compliance can determine if any state or federal regulations were violated during the malfunction event. The permittee tracks malfunction emissions in the same manner as for SSM emissions.

General Condition 1. Reiterates the requirement that SSM emissions be minimized regardless if the SSM emission limit has been met or not (20.2.72.14.A NMAC).

General Condition 2. Emphasizes that although malfunction emission limits may be established, permittees must still minimize emissions during startup, shutdown, and malfunction. This requirement applies regardless if the malfunction limit has been met or not.

MONITORING SPECIFICATIONS: NA, not a TV permit

Date of Monitoring Protocol used for Engines and Operating Situation: December 7, 2010
Date of Monitoring Protocol used for Dehydrators and Operating Situation: May 23, 2011

15.0 **For Title V action: Cross Reference Table between NSR & TV Permits:** Not required for NSR

16.0 **Permit specialist's notes to other NSR or Title V permitting staff concerning changes and updates to permit conditions.**

Emission Estimate Verification:
The permit writer verified the calculations and assumptions used in emission estimates.

SSM emissions are due to venting of predictable quantities of field gas from turbines, compressors, and associated piping during routine and predictable startup or shutdown.

Compressor Units 1a, 3a - 16a, 33a are calculated to emit SSM gas loss of 9,865 scf per event. With 390 startup and shutdown blowdowns per year, the VOC emission rate is 12.0 tons per year.

A 0.27 mol % VOC content was applied to the cubic feet of gas vented to determine VOC emissions. The percent VOCs was determined from a 12/10/09 extended gas analysis. HAPs were determined using the same method. No hydrogen sulfide was detected in the gas.

Malfunction emissions due to venting of field gas apply to all operations at the facility except combustion and dehydrator still vent emissions.

Applicant requested 10 tpy VOC malfunction emissions, which is the allowable limit according to department guidance and does not exceed any permitting threshold.

There are no NESHAP applicable to these activities and so no HAP limits apply.